
Moats, L. (2000). Why study language? In L. Moats' *Speech to print: Language essentials for teachers* (pp. 1-20). Baltimore, MD: Paul Brookes Publishing.

CHAPTER 1

Why Study Language?

In most colleges and graduate programs, language is studied by future linguists, speech teachers, actors, singers, and anthropologists. Seldom has language study been required of teachers, except in a general format designed not to overload the novice with too much detail. In such general courses on language development, teachers are often left on their own to find the connection between textbook information and instruction of children. The practical impact of understanding linguistics is seldom stated or illustrated. This book was written to alter that tradition and to show that language study is indispensable for teachers of reading, writing, speaking, and listening—the “language arts.”

The aim of this book is to make language structure accessible for teachers of reading and writing so that they can use instructional programs with confidence and flexibility. The teacher who understands language and how children are using it can give clear, accurate, and organized information about sounds, words, and sentences. The teacher who knows language will understand why students say and write the puzzling things that they do and will be able to judge what a particular student knows and needs to know about the printed word. Literacy is an achievement that rests on all levels of linguistic processing, from the elemental sounds to the most overarching structures of text. To help the teacher deliver successful instruction, this book of necessity contains a great deal of information about the lower levels of language (units smaller than the word, such as sounds, syllable-

Table 1.1. Levels of language organization (from below word level to above word level)

Level of language	Parts of language studied
Phonology	Speech sounds (phonemes)
Orthography	Spelling patterns
Morphology	Units of meaning (morphemes) within words
Syntax	Phrase and sentence structure
Semantics	Phrase and sentence meaning
Pragmatics	Word choice and use in context
Discourse structure	Organization of connected sentences

bles, letters, and some morphemes) from which the higher levels (units larger than the word, such as phrases, sentences, and paragraphs) are constructed. (Table 1.1 shows the different levels of language.)

Reading and writing are forms of language processing. The print on any page is a visual representation of language form and structure that must be translated by the reader or transcribed by the writer. When we teach reading and writing, we are teaching language at one or all of its many layers. Reading, after all, is not a rote exercise in recitation of words but a translation of print to speech to meaning that is mediated by the language centers of the brain. Language itself is the substance of instruction.

What children bring to the printed page, or to the tasks of reading and writing, is knowledge of spoken language. What must be learned is knowledge of the written symbols that represent speech and the ability to use those productively. Knowing the difference between *sacks* and *sax*, *past* and *passed*, or *their* and *there* or knowing that *antique* says "antiek" requires language awareness at several levels. Students without awareness of language systems will be less able to sound out a new word when they encounter it, less able to spell, less able to interpret punctuation and sentence meaning, and less able to learn new vocabulary words from reading them in context. One of the most important jobs of any teacher of reading and writing is to give students sufficient understanding of the language they speak, read, and write so that they can use it to communicate well.

WHAT IS LANGUAGE?

Generative language is an achievement unique to human beings. Human language is generative because its systems allow us to invent new messages without limit. Unlike the signing systems of some highly evolved animals, such as wolves or whales, human language enables us to produce many messages that have never been spoken before. Speakers of a language share an understanding of the rule systems that govern the production of sounds, words, and sentences and when to use them. Speakers of English, for example, know that the sequence *Understanding basic is to language teaching reading* is not an allowable sentence but that *Understanding language is basic to teaching reading* is permitted. Speakers of English know that the names *Nkruma* and *Zhezhnik* are not English because sound sequences in those words do not occur in the English language sound system.

On every part of the earth, people have invented languages for talking to one another. More than 4,000 languages exist on the earth today,¹ but many are disappearing quickly as Western civilization encroaches on developing societies. All of these human languages share properties known as **universals**. From a finite set of speech sounds (**phonemes**), speakers of an oral language say and understand many thousands of words. Words are composed of meaningful units (**morphemes**) that often can be recombined to make new words. Words themselves have meaning; the study of word, phrase, and sentence meanings is called **semantics**. Words belong to grammatical categories and are spoken in an order determined by underlying rules of **syntax** or sentence structure. Every speaker of a human language shares with every other speaker of that language the capacity to produce and comprehend an infinite number of sentences whose structures share basic properties. **Pragmatics** is the rule system that tells speakers how to use language for social communication. Humans have also devised systems of written symbols (**orthographies**) to represent the sounds, syllables, and morphemes of spoken language.

This last achievement, the invention of tools for reading and writing, sets humans apart from all other creatures. In evolutionary terms, reading and writing are very recent accomplishments. Humans did not invent writing until the Chinese and Mediterranean peoples used meaningful written signs for concepts and words between 5,000 and 10,000 years ago. Alphabets, systems that use symbols for individual speech sounds, were invented little more than 3,000 years ago. It is understandable, then, that learning to read is not as natural or biologically "wired in" as are speaking and listening and that reading must be taught directly to most children over several years through formal education. Our brains are not as fully evolved for the processing of written language as they are for the processing of spoken language, and, therefore, learning to read and write are much more challenging for most of us than learning to speak.

Languages are constantly changing as the need for new expressions arises and as old expressions become obsolete. Every year the speakers of a language such as English generate several thousand new words and word uses to add to their language systems. The age of electronics, for example, has spawned terms such as *fax*, *e-mail*, *surfing the web*, *geek*, and *rad*. Committees that are created by some governments to preserve language purity, prevent change, or establish a standard are bucking a natural human tendency—to generate new language forms and uses within an established system.

No language is superior to any other in terms of the complexity of the rule systems that it embodies. English, however, has one of the most complex alphabetic orthographies, is spoken and written as a first or second language throughout the world, and has the largest vocabulary. It has become the language of international commerce. Nevertheless, English has many variants, including some "dialects" that are really different language systems and that present a significant challenge for teachers of reading and writing.

LITERACY IS THE MOST IMPORTANT GOAL OF SCHOOLING

Few would deny that teaching children to read, write, spell, listen, and speak is among the foremost responsibilities of educators. Without well-developed reading

skills, children cannot participate fully in classroom learning. They are at much greater risk for school failure and lifelong problems with employment, social adjustment, and personal autonomy. Literate cultures expect literacy of everyone, even so-called low-skilled workers, who must read labels, directions, lists, forms, and records. Although a fairly large number of individuals in our society have always had difficulty learning to read, it is no longer acceptable to ignore them, give them failing grades, or banish them to the ranks of lower-status jobs.² The cost to society is too great. In addition, there are many children who would learn to read and write much better if their instruction were to teach them to understand the systems of their own language (sounds, spellings, meaningful networks, sentences, text organization) as well as the strategies to comprehend narrative and expository text.

When children are taught well and, consequently, begin to read in kindergarten or first grade, they are likely to reap benefits throughout their schooling. Those who read successfully from the start are more likely to enjoy reading, develop their knowledge of words and language patterns, and attain knowledge of the world by reading.³ Failure to read well, in contrast, undermines vocabulary growth, knowledge acquisition, verbal facility, and writing skill. Once behind in reading, few children catch up to grade level⁴ unless they receive intensive, individual, expensive, and expert instruction,⁵ a scarce commodity in most schools. Teaching everyone to read well, however, is a goal that has eluded us in the past.

About 20% of elementary students are very poor readers; at least another 20% do not read fluently enough to enjoy or to engage in independent reading.⁶ Thus, it should not be surprising that on the 1994 National Assessment of Educational Progress (NAEP), 44% of all fourth graders in the United States scored at a level "below basic."⁷ According to the U.S. Office of Technology, 25% of American adults cannot perform the essential literacy requirements of a typical job.⁸ The rate of functional illiteracy in our capital city, Washington, D.C., is the highest in the nation at 37%.⁹ Individuals who are poor readers are much more likely than literate people to drop out of school; find their way to jail; or struggle to find and keep meaningful, satisfying work.¹⁰

For children who live in poverty or are from ethnic minorities and attend urban schools, the incidence of reading failure is astronomical and completely unacceptable for a literate society. African American students, Hispanic students, students whose native language is not English, and those from impoverished homes fall behind and stay behind in far greater proportion than their Caucasian, middle-class counterparts. The rate of reading failure in these groups is 60%–70% according to the 1994 NAEP.¹¹ This figure alone explains much about the poor academic achievement of some minority students and why they are underrepresented in professions that depend on higher education.

One's family background and cultural context, however, do not guarantee literacy. Students of all backgrounds and intellectual talents may experience difficulty with language and reading that erodes their overall academic achievement.¹² In 1996, California initiated a series of laws to reform reading education after 49% of children of college-educated parents in that state scored "below basic" on the NAEP.¹³ One third of fourth graders who are poor readers nationwide are from college-educated families who presumably encourage literacy in the home.¹⁴

Exposure to books is vital to becoming a good reader, but it is not enough for most students to learn to read. Even if their parents read to them at home or they

are surrounded with good literature, the majority of our students need to be taught how to read.¹⁵ Many students need to be taught how spoken and written language work so that they have the tools to decipher and generate the written word. The good news is that when teaching is skillful and informed, most students can learn to read at acceptable levels.

SKILLFUL TEACHING PREVENTS MOST READING PROBLEMS

Most reading problems can be greatly ameliorated through appropriate instruction. According to the convergent findings of numerous studies from the 1990s, classroom teaching is the best antidote for reading difficulty.¹⁶ Although parents, communities, and volunteer tutorial programs do influence how well and how soon students read, informed classroom instruction that begins to teach critical language and reading skills in kindergarten and that is sustained throughout school ensures success for all but a few students with moderate or severe learning disabilities. Reading scientists now estimate that 95% of all children can be taught to read at a level constrained only by their reasoning and listening comprehension abilities.¹⁷ It is clear as well that students in high-risk populations need not fail at the rate they do.¹⁸ Students who are African American or Hispanic or who live in poverty can achieve as well as their more advantaged age-mates when placed in schools with strong leaders, valid programs, and well-prepared and well-supported teachers. Teachers who incorporate critical language skills into direct, systematic, sequenced lessons can reach most children.¹⁹ Reading programs that are well designed and well implemented are the best guard against reading failure.

TEACHING READING IS COMPLEX AND CHALLENGING

Teaching reading and writing requires considerable expertise. The degree of expertise has not been fully appreciated until now, as many teachers have been given only one survey course on reading methods and little background in reading psychology or language structure. Teachers who are successful with most students know their content and have learned effective teaching strategies through several years of study, experience, and mentoring. Many more children succeed in learning to read when teaching is skillful and organized around well-defined content. Learning to read is a complex linguistic achievement dependent for many students on effortful and incremental skill development, and the teacher whose work is guided by an understanding of reading psychology, language structure, and proven methods is most likely to enable that achievement.

What, exactly, must an effective teacher be able to do? Often it is said that there are many ways to teach reading, or that each approach is going to be helpful with some students. The consensus of research,²⁰ however, is that some approaches are more effective than others and that what works best can be explained on the basis of the developmental level of the student, the cognitive and linguistic characteristics of the student, and the language content itself. Thus, the choice of instruction should be based on awareness of the student and the content at hand. At a minimum, teachers must know how students learn to read (reading psychology), the content of reading (the form and meaning of language), and pedagogy (how it is

taught). Then they must spend time implementing what they know until their skills are well honed.

What does a teacher actually do? In the course of any day, the teacher must continually pique children's interest in reading through incentive programs and discussions in which students respond to many kinds of texts, including stories, informational pieces, and poetry. The teacher must also organize the class so that she or he can instruct groups of students according to their levels. The teaching of component skills must be direct, systematic, and explicit to get the best results. To accommodate children's variability, the teacher must assess children and know how they are progressing. She or he must interpret errors, give corrective feedback, select examples for concepts, explain new ideas several ways, and connect many component skills with meaningful reading and writing experiences.

In years past, our courses on reading instruction presented menus of possible approaches from which teachers were to choose, based on convenience, whim, surface appeal, prior exposure, or any number of nonscientific reasons. As research evidence accrues to explain how children learn to read and what components of programs are necessary, we aim to guide the choices by accumulating solid scientific information documenting which methods work best with which children at which stage of reading development under what conditions.

NEW RESEARCH ABOUT LANGUAGE AND READING

The findings of scientific research in the field of reading have had a major impact on federal, state, and local policies pertaining to teacher preparation and reading instruction. Prior to the publication of the National Academy of Sciences' *Preventing Reading Difficulties in Young Children*,²¹ teacher preparation and teaching itself was driven more by fads and philosophies than by facts.²² This should not be surprising, because the methods of psychological experimentation necessary to unravel the mystery of reading were not developed until the mid-1970s, and there is always a long delay between developments in academic research disciplines and their incorporation into teaching practice. The tools and concepts of modern cognitive and linguistic science have been applied to understanding reading only since the mid-1970s.²³ As with other fields of scientific investigation, many studies in related disciplines were needed before consensus findings could be accepted and disseminated. It is not surprising, then, that new insights into language, reading, and writing are beginning to inform teacher preparation and that a course in language study²⁴ might be a new requirement for teachers in training. There are several reasons that we have been slow to understand how reading is accomplished and how best to teach it.

Language Processing Is Largely Unconscious

Our processing of language, especially at the level of sounds, syllables, and words, is automatic—that is, fast and unconscious. Our processing of print, if we are good readers, has also become automatic. We are not aware of how we are actually reading as we are doing it, and we are not aware of the mental events that allow reading to happen. Automaticity is the word for the ability to execute tasks without

conscious attention. It is a characteristic of skilled performance of any kind, such as playing an instrument, playing an athletic game, or operating a machine. The mental processes of good and poor readers are neither self-evident nor easy to grasp because they occur below the level of consciousness by design. Introspection—that is, viewing one's own mental activity—is misleading for understanding the mind of the skilled reader, because the print-speech associations that occur during reading are too rapid and automatic to be perceived.

For example, do you think that you skip over words when you read and somehow extract the meaning of the print without seeing what is really there? That idea was prevalent in the early 1970s,²⁵ when instructional methods that promote guessing at words on the basis of context were promoted.²⁶ In fact, laboratory experiments that track eye movements during reading, using many different stimuli and many kinds of subjects, have shown that skilled reading is print driven.²⁷ That is, we process almost every letter of every word when we scan print, even though we fixate or focus our eyes primarily on the content (meaning-bearing) words as we scan a line. Those who read well process the details in the printed words accurately; those who read poorly do not process the details of the print and tend to skip over words they are unsure of because they cannot **decode** them. As many studies have shown, that tendency to skip over words is not a result of any vision problem in most cases but a result of a problem matching the print to sound, completely, accurately, and efficiently. Those who accomplish letter-wise text scanning with relative ease and fluency have a better chance of comprehending well. Those who comprehend poorly often lose meaning because they cannot read the words accurately.

Primary processes that drive reading include our ability to associate print units (letters, letter combinations, letter sequences, words, and punctuation marks) with linguistic units (phonemes, **onsets**, **rimes**, **syllables**, morphemes, words, and phrases). Linguistic units are neither auditory nor visual; they are abstract, mental phenomena and can be understood even by people who are hard of hearing. Because our attention is on meaning, we are not aware of the code translation process by which meaning is conveyed. Nor should we be—unless we must teach someone the same process deliberately, step by step. Until we are faced with a class of children who are learning how to read symbols that represent speech sounds and word parts, we may never have analyzed language at the level required for explaining and teaching it. Similarly, we may not know how a paragraph is organized or how a story is put together until we teach writing to students who do not know how to organize their thoughts. Thus, to understand printed language well enough to teach it explicitly requires conscious study of its systems and forms, both spoken and written.

Language Structure Is Not Self-Evident

Even well-educated adults often do not know exactly what goes into speaking, understanding words, using **phonics**, spelling, interpreting sentences, or organizing a composition even though they use these language structures every day. On direct measures of language knowledge at the “lower” levels (sounds, word parts, spelling), most adults show cursory or incomplete mastery at best.²⁸ For example, the concept that a letter combination (*ch*, *wh*, *sh*, *th*, *ng*) can represent one unique

speech sound is unclear to a surprising number of experienced teachers according to a teacher survey given by this author²⁹ (blank surveys appear at the end of this chapter). Many identify these units by rote but are unable to differentiate conceptually between these spelling units (digraphs) and two letters that stand for two distinct sounds (consonant blends such as *cl*, *st*, *pr*) or silent letter spellings that retain the sound of one spelled consonant (*kn*-, *wr*-, *-mb*). Very few adults, unless they are studying and teaching the material, can explain why we double the consonant letters in words like *misspell*, *dinner*, and *accommodate* or why there is a "silent *e*" on the end of the word *love*. A deeper, explicit level of knowledge may not be necessary to read the words, but it will be necessary to explain pronunciation and spelling, where the words came from, and how spelling is related to meaning.

In addition, the relationships among the basic skills of reading and reading comprehension are not obvious or self-evident. When children read poorly in the middle and upper grades, we may assume that the problem is one of comprehension. We may not realize that difficulties with word recognition, accuracy, speed, **reading fluency**, and comprehension strategies all contribute to poor reading in older students but that word recognition and fluency problems are characteristic of most. Students who cannot read words well usually demonstrate weaknesses in **phonological processing**—the ability to identify, manipulate, produce, and remember speech sounds—but one might not perceive this weakness without the special training that begins with language study.

Good Readers Are Aware of Language Structure

Some children learn language concepts and their application very easily in spite of incidental teaching and very few examples. Just as some children seem to be born with insight into how the number system works, others just figure out how the system of print represents speech. Figure 1.1 shows the writing of a child on her fourth birthday who had already intuited a great deal about how sounds are spelled.

Hannah's understanding of sound-symbol correspondence was precocious; for example, she knew that letter combinations *th* and *ng* were used to represent sounds. She clearly had a good sense of the sounds that make up words because she was able to use letters that spell them. Awareness of speech sounds, or **phoneme awareness**, in turn, is an aspect of a more fundamental linguistic competence known as *phonological processing*. Children who learn to read well are sensitive to linguistic structure at the level of speech sounds, parts of words, meaningful parts of words, sentences, and text. They can recognize repetitious patterns in print and connect letter patterns with sounds, syllables, and meaningful word parts quickly, accurately, and unconsciously. Effective teaching of reading presents these concepts in an order in which children can learn them and reinforces appreciation of the whole system in which these elements are arranged.

Poor Readers' Problems Begin with Phonology

The language skills that most reliably distinguish groups of good and poor readers are specific to the phonological, or speech sound, processing system. These

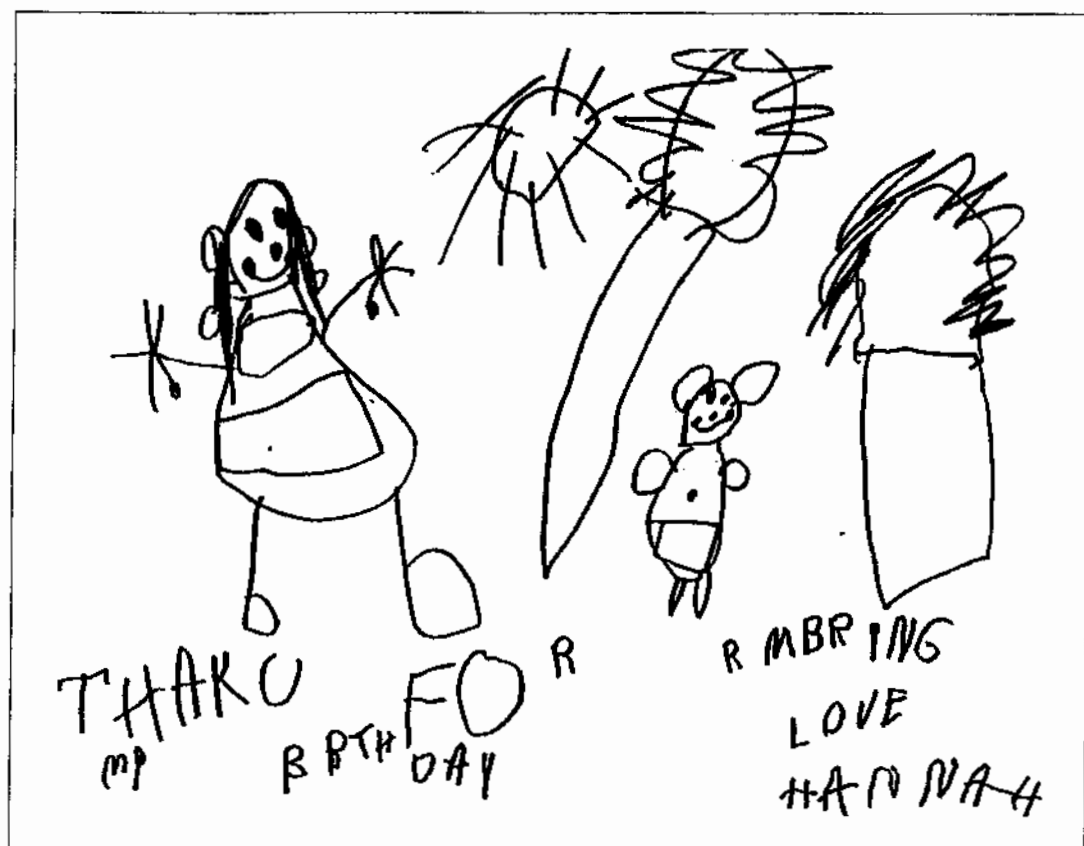


Figure 1.1. Hannah's birthday note.

skills include awareness of linguistic units that lie within a word (consonants, vowels, onsets, rimes, syllables, grammatical endings, meaningful parts, and the spelling units that represent them) and fluency in recognition and recall of letters and spelling patterns that make up words. Those who have the most trouble comprehending written language may be good at listening comprehension but have trouble at more basic levels of language, beginning with **phonology**. For example, children who comprehend well when they read also do better at tasks such as reading words taken out of context, sounding out nonsense words, and spelling nonsense words than do those who comprehend poorly.³⁰ Thus, skilled reading presents a paradox: Students who can most easily make sense of text are also those who can most easily read nonsense.³¹

Intelligence and verbal reasoning ability do not predict reading success in the beginning stages as well as decoding skills do. In fact, new data show that 80% of the variance in reading comprehension at the first-grade level is accounted for by how well students sound out words and recognize words out of context.³² The relationship between decoding and comprehension changes as students move into the middle grades, after they have learned how to read words. Comprehension strategies and knowledge of word meanings become more of a factor in reading success as students move into more advanced stages. When appropriate, the emphasis of instruction will be on motivating children to read every day and to use interpretive strategies central to comprehension: summarizing, questioning, and monitoring one's own understanding.

HOW READING AND SPELLING DEVELOP

Again, longitudinal research indicates that students who read well in high school learned early to sound out words and read new words with ease. That is, they gained the insight that letters in our writing system more or less represent phonemes and used this knowledge to map written to spoken language. Early reading follows a predictable course regardless of the reader's speed of reading acquisition.³³ The learner progresses from global to analytic processing, from approximate to specific linking of sound with symbols, and from context-driven to print-driven reading as proficiency is acquired. Learning to spell and read words is not a rote process of memorizing letter strings of increasing length. Figure 1.2 shows the progression in reading and spelling development.

Prealphabetic Reading and Writing

In the first stage of reading and spelling development, the **prereading** or **prealphabetic** stage, children do not understand that letters represent the sounds in words, although they do know that print represents spoken messages. They remember words such as family names and signs by configuration or general visual appearance and are highly reliant on the context in which words occur to recognize them. They have no strategy other than rote memory of visual patterns or recognition of a word in its physical or meaning context to read it. Their spelling of words is often a string of familiar letters in random order, perhaps with a few idiosyncratic symbols or numerals thrown in the mix. They do not yet know the **alphabetic principle**, that is, the basic concept that letters represent segments of their own speech. An example of prealphabetic writing appears in Figure 1.3.

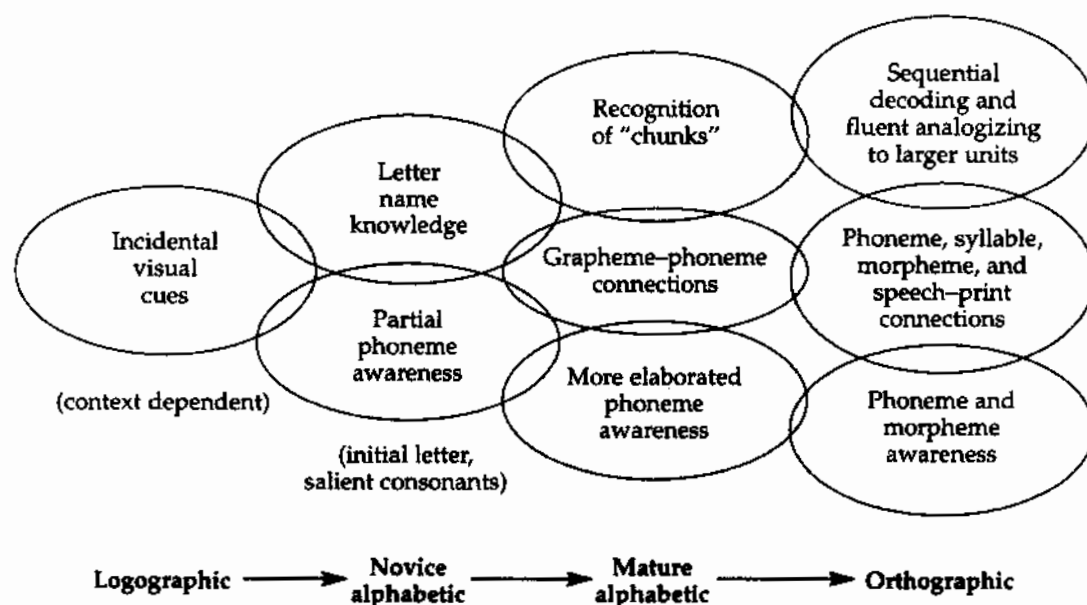


Figure 1.2. Schematic representation of reading and spelling development. (Based on Ehri, 1994.)

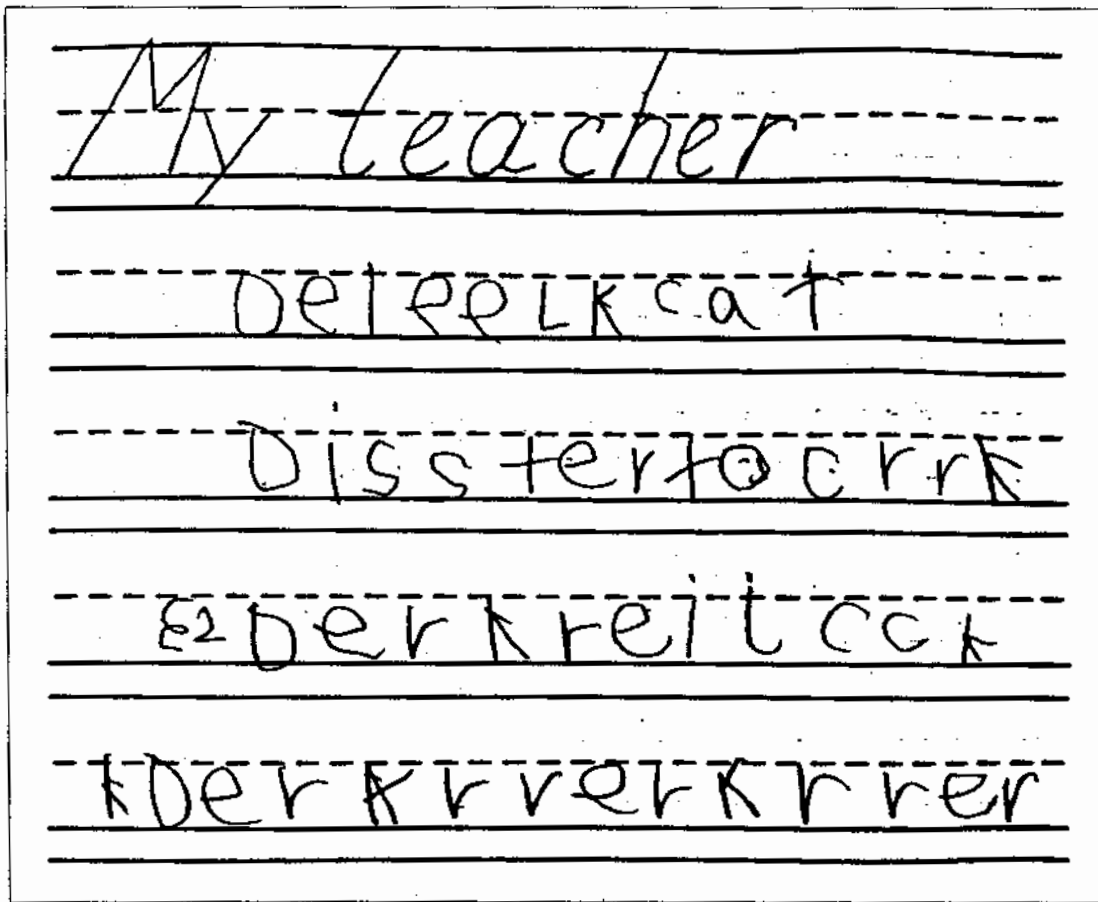


Figure 1.3. Example of prealphabetic writing.

Early Alphabetic Reading and Writing

Next, there is a qualitative shift of approach in both reading and spelling when children discover a critical fact: Letters correspond to the sounds that make up spoken words (the alphabetic principle). From their growing awareness of speech sounds and knowledge of letter forms, children begin to spell and read by sounding out parts of words, often a few consonants that are salient in speech (as in KR for *car* and HP for *happy*). At this point, they may attempt to "read" words by guessing from the initial consonant and the context, and they may spell by writing a few consonants but leaving out the vowel or the internal, less distinct speech sounds. They are beginning to demonstrate awareness of phonemes and the use of the alphabet to represent them. Figure 1.4 shows one child's early alphabetic writing.

Later Alphabetic Reading and Writing

skill at sounding out words and spelling them phonetically unfolds gradually as children become able to identify all of the speech sounds in a word to which letters need to be matched. As more elaborated phoneme awareness is acquired, children learn quickly how print patterns represent speech. At this stage, children render

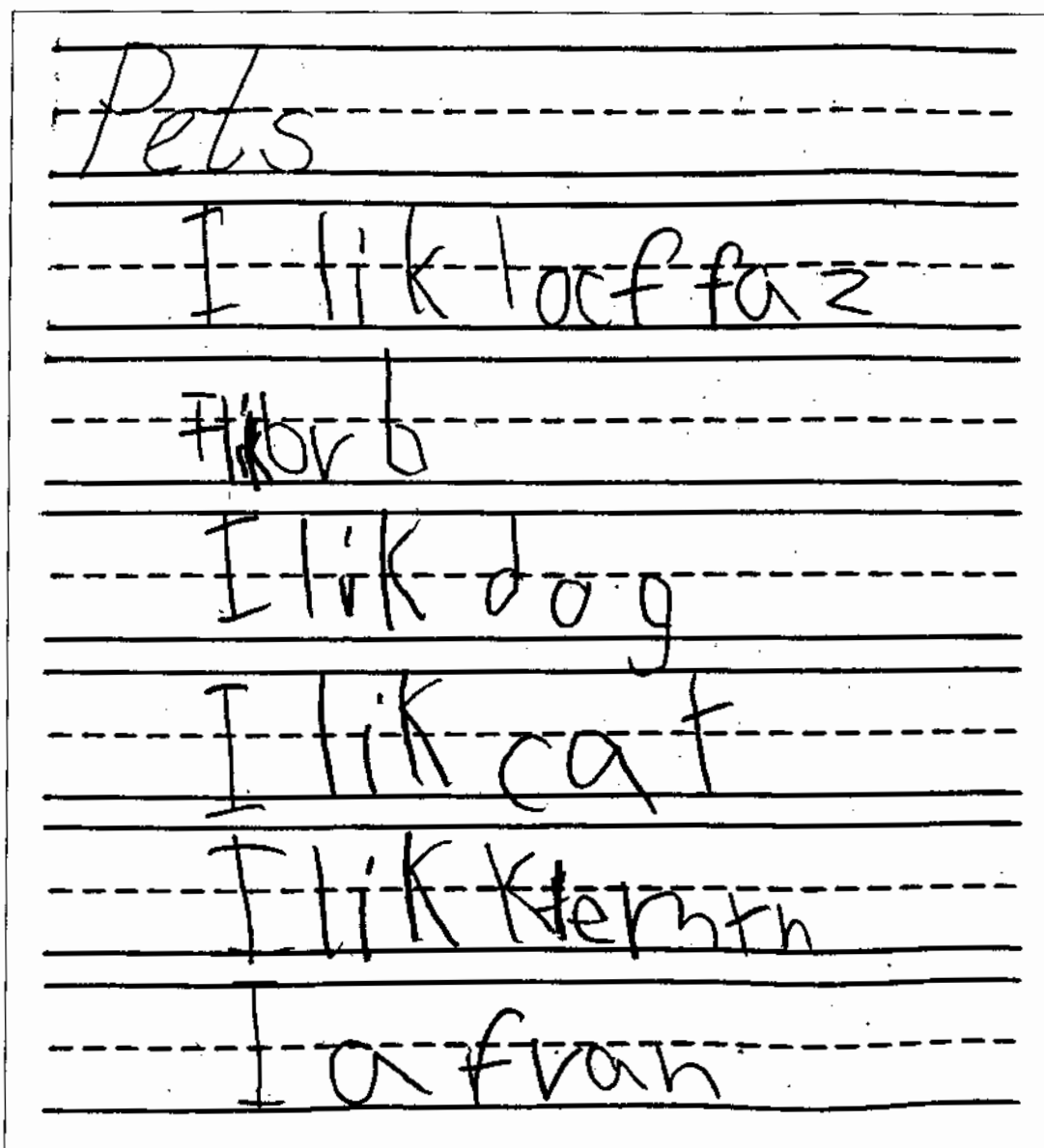


Figure 1.4. Early alphabetic writing. Child's rereading of own writing: "I like elephants, I like birds, I like cats, I like kittens . . ."

detailed phonetic spellings of unknown words and try to sound out words if the strategy is encouraged. They are usually rather slow and disfluent as they start to sound out words because so much conscious attention is needed to match symbols to sounds in sequence. Sight words, however, are learned quickly if they are encountered often enough or if they are visually distinctive enough.

Exposure to text and reading practice are critical in moving the process of spelling development along quickly. If children at this stage are asked to identify nonsense words that look the most like real words, they often show surprising awareness of the letter sequences and orthographic patterns that characterize English spelling, even though they may not associate all of those sequences with speech sounds. For example, they may know that *-ck* is used at the ends of words but not at the beginnings, that letters can be doubled at the ends of words or within words but not at the beginnings, that only certain letters are doubled, and that

syllables typically contain a vowel letter. Orthographic knowledge, knowledge of the spelling system itself, develops when the student has internalized awareness of the sounds to which the letters in words correspond. A sample of later alphabetic writing appears in Figure 1.5.

Learning the Spelling System—the Orthographic Stage

Children must learn a whole system of correspondence between sounds and their symbols to spell one-syllable words. Long vowel spellings, the use of silent *e*, vowels followed by *r*, and the conditions for spelling certain consonants certain ways at the ends of words, such as *-dge/-ge* and *-tch/-ch*, are learned as patterns, wherein many sounds are spelled with more than one letter. Children who are progressing typically then build up associations to syllables, word parts, and meaningful parts of words such as the ending *-ing*, which in turn allows rapid recognition of whole words after a few exposures to them. They learn about the relationship among sound, spelling, and meaning in phases; for example, they learn gradually that *-ed* means the past tense but is pronounced three different ways: /t/ as in *raked*, /d/ as in *played* and /ed/ as in *painted*. Children use an analogy strategy to recognize unfamiliar words as soon as their lexical knowledge permits. That is, they will identify an unfamiliar word by mentally comparing it with a known word that has the same pattern or configuration, such as comparing the /g/ pronunciation of *gh* in *ghetto*, *ghoul*, and *Ghana* with the more familiar *ghost*. Instruction that calls attention to sound-symbol correspondence and patterns in print hastens the learning process considerably.

Effective teaching, which is responsive to students' developmental levels, requires the explanation of both spoken and written language. The content of any lesson should depend on what students already know and should move them through the system of language organization. Teaching children about sounds is appropriate at the very early stages; an emphasis on meaningful parts, or **morphology**, is appropriate when the foundation is secure. Expert teachers will have

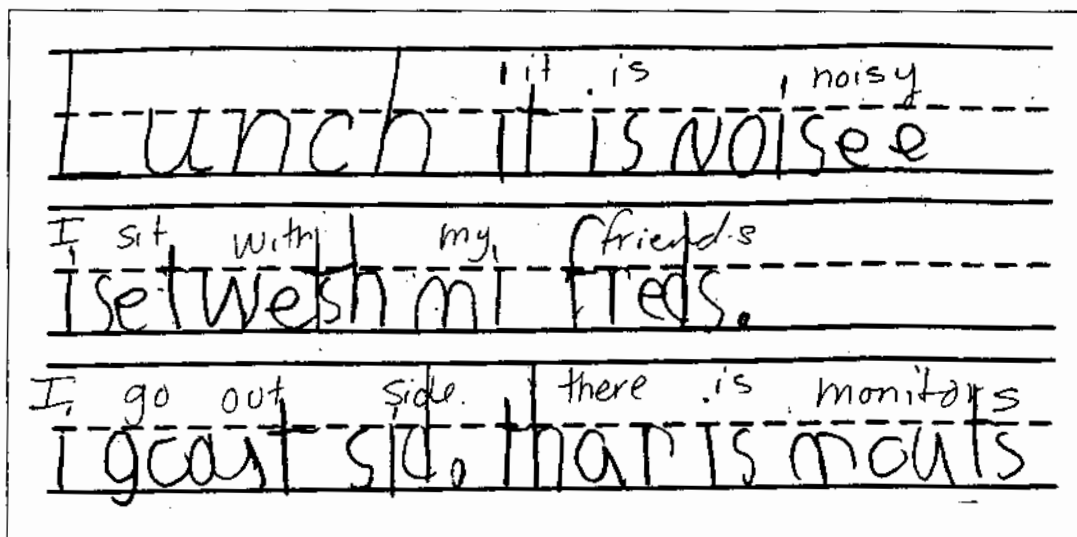


Figure 1.5. Later alphabetic writing with teacher's notes from student's rereading.

the knowledge, strategies, and materials to decide what to do with particular children not on the basis of ideology but on the basis of observation, assessment, judgment, knowledge of child development, and knowledge of language.

PRINCIPLES OF EFFECTIVE TEACHING OF READING, SPELLING, AND WRITING

Effective teachers of reading and writing raise students' ability to interpret and generate sound-spellings, syllables, morphemes, phrases, sentences, paragraphs, and various genres of text. They also balance skill instruction with daily writing and reading that is purposeful and engaging, no matter what the skill level of the learner. Middle and upper grade children with poor reading can be brought up to grade level with appropriate instruction, although the time and effort involved are considerably greater than that required to teach younger children.³⁴ Well-designed, controlled comparisons of instruction have consistently supported these findings.³⁵

- Direct teaching of sound-symbol correspondence (phonics), word recognition, comprehension, and literature appreciation is necessary from when children begin school until they become proficient readers and writers.
- Phoneme awareness instruction, when linked to systematic decoding and spelling instruction, is a key to preventing reading failure in children who come to school without these prerequisite skills.
- It is better to teach the code system of written English systematically and explicitly than it is to teach it randomly, indirectly, or incidentally. The units for instruction (sound, syllable, morpheme, word) should vary according to students' reading and spelling skill.
- The most effective programs include daily exposure to a variety of texts and incentives for children to read independently and with others. Practices that build reading fluency include repeated readings of text, alternate reading with a partner, and simultaneous oral reading of easy material.
- Vocabulary is best taught with a variety of complementary methods designed to explore the relationships among words and the relationships among word structure, origin, and meaning.
- Key comprehension strategies to teach include summarizing, clarifying, questioning, and visualizing; these should be modeled explicitly by the teacher and practiced overtly if students are not comprehending well or if they approach reading comprehension passively.
- Effective teachers encourage frequent prose writing to enable deeper understanding of what is read.

To master all of these principles and apply them well takes most of us a lifetime. At least we can proceed with the confidence that reading and writing instruction can be grounded in a solid body of evidence about what works, for whom, and why. Although there are many questions left for researchers to explore,³⁶ it is no longer justified to cling to some of the myths that have affected reading educa-

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tion for several decades. It is beneficial to teach children about language structure. Teaching about language can be engaging, active, and well informed. Knowing about phonemes, syllables, morphemes, and the spelling system enables children to read words accurately and quickly. Knowing how the spelling system works enables children to learn more words and to write more fluently. But if we teach children this content, it means that we, the educators, must know it well. Just as a physician must study anatomy to understand physical functioning, so must we know the linguistic structure that supports communication. The major systems of language, except for pragmatics and discourse structure, are emphasized in this book. Within- and end-of-chapter exercises are included in this book to help the reader understand and apply new concepts immediately. Among the appendixes is information about orthographic structure, lesson planning, and case study analysis, in addition to an answer key and a glossary of terms highlighted in the text. In-depth discussion of pragmatics, discourse structure, and their relationship to comprehension and composition will be left for another volume.

ENDNOTES

1. Yule, 1996.
2. Shaywitz, Escobar, Shaywitz, Fletcher, & Makuch, 1992.
3. Cunningham & Stanovich, 1998.
4. Juel, 1988; Shaywitz et al., 1992.
5. Torgesen, Wagner, & Rashotte, 1997.
6. Fletcher & Lyon, 1998; Shaywitz et al., 1992.
7. U.S. Department of Education, National Center for Education Statistics, National Assessment Governing Board, 1994.
8. U.S. Office of Technology Assessment, 1993.
9. National Institute for Literacy, 1998.
10. Cramer & Ellis, 1996.
11. U.S. Department of Education, National Center for Education Statistics, National Assessment Governing Board, 1994.
12. Francis, Shaywitz, Steubing, Shaywitz, & Fletcher, 1996; Stanovich & Siegel, 1994.
13. Sacramento County Office of Education, 1997.
14. National Assessment of Educational Progress, 1995.
15. Scarborough & Dobrich, 1994; Snow, Burns, & Griffin, 1998.
16. Adams, 1990; Foorman, Francis, Shaywitz, Shaywitz, & Fletcher, 1997; Snow et al., 1998.
17. Fletcher & Lyon, 1998.
18. Nicholson, 1997.
19. Brady, Fowler, Stone, & Winbury, 1994; Brown & Felton, 1990; Foorman et al., 1997; Gaskins, Ehri, Cress, O'Hara, & Donnelly, 1996; Scanlon & Vellutino, 1997; Tangel & Blachman, 1995; Tunmer & Hoover, 1993.
20. See, for example, Adams, Treiman, & Pressley, 1998; Fletcher & Lyon, 1998; Learning First Alliance, 1998; Snow et al., 1998.
21. Snow et al., 1998.
22. Stanovich, 1994.
23. See Adams, 1990; Adams, Treiman, et al., 1998; Blachman, 1997; and Pressley, 1998, for research reviews.
24. See also Brady & Moats, 1997; Moats, 1995, 1998; and Moats & Lyon, 1996.
25. See Adams, 1990, for a retrospective.
26. Adams, 1990.
27. Rayner, 1997.
28. Moats, 1995; Moats & Lyon, 1996; Scarborough, Ehri, Olson, & Fowler, 1998.

29. Moats, 1994.
30. Fletcher & Lyon, 1998.
31. Rack, Snowling, & Olson, 1992.
32. Foorman et al., 1997.
33. Bear, Invernizzi, Templeton, & Johnston, 2000; Chall, 1983; Ehri, 1994.
34. Torgesen et al., 1997.
35. Pressley, 1998.
36. Blachman, 1997; Pressley, 1998; Snow et al., 1998.

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